CONFERENCE ON DISARMAMENT

CD/1205
CD/NTB/WP.24
20 July 1993

Original: ENGLISH

LETTER DATED 20 JULY 1993 FROM THE REPRESENTATIVE OF THE UNITED STATES OF AMERICA ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMAMENT TRANSMITTING A DOCUMENT CONTAINING THE TEXT OF PRESIDENT CLINTON'S RADIO ADDRESS OF JULY 2, 1993, REGARDING HIS DECISION ON U.S. NUCLEAR TESTING POLICY

I have the honor to forward to you a document containing the text of President Clinton's radio address of July 2, 1993, regarding his decision on U.S. nuclear testing policy. The text in the document has been excerpted from a longer text dealing with other, unrelated subjects.

Could you please take the appropriate steps to register this document as an official document of the Conference on Disarmament, and to have it distributed to all member delegations and non-member states participating in the work of the Conference.

(Signed): Stephen J. Ledogar
Ambassador
U.S. Representative
to the Conference on
Disarmament

THE WHITE HOUSE

Office of the Press Secretary

July 2, 1993

RADIO ADDRESS BY THE PRESIDENT*

The Roosevelt Room

....Because of the vigilance, the democratic values, the military strength of the United States and our allies, we won the Cold War. Our inheritance, our victory is a new chance to rebuild our economies and solve our problems in each of our countries while we reduce military spending. But our profound responsibility remains to redefine what it means to preserve security in this post-Cold War era. We must be strong. We must be resolute. And we must be safe.

This great task has certainly changed with the passage of the Cold War. The technologies of mass destruction in the hands of Russia and the United States are being reduced. But technologies of mass destruction that just a few years ago were possessed only by a handful of nations, and still are possessed only by a few, are becoming more widely available. It is now theoretically possible for many countries to build missiles, to have nuclear weapons and other weapons of mass destruction. This is a new and different challenge that requires new approaches and new thinking.

During my campaign for President, I promised a wholehearted commitment to achieving a comprehensive nuclear test ban treaty. A test ban can strengthen our efforts worldwide to halt the spread of nuclear technology in weapons. Last year, the Congress directed that a test ban be negotiated by 1996. And it established an interim moratorium on nuclear testing while we reviewed our requirements for further tests. That moratorium on testing expires soon.

Congress said that after the moratorium expires, but before a test ban was achieved, the United States could carry out up to 15 nuclear tests to ensure the safety and reliability of our weapons. After a thorough review, my administration has determined that the nuclear weapons in the United States arsenal are safe and reliable.

Additional nuclear tests could help us prepare for a test ban and provide for some additional improvements in safety and reliability. However, the price we would pay in

(* Excerpt from broadcast)

conducting those tests now by undercutting our own nonproliferation goals and ensuring that other nations would resume testing outweighs these benefits.

I have, therefore, decided to extend the current moratorium on United States nuclear testing at least through September of next year, as long as no other nation tests.

And I call on the other nuclear powers to do the same. If these nations will join us in observing this moratorium, we will be in the strongest possible position to negotiate a comprehensive test ban and to discourage other nations from developing their own nuclear arsenals.

If, however, this moratorium is broken by another nation, I will direct the Department of Energy to prepare to conduct additional tests while seeking approval to do so from Congress. I therefore expect the Department to maintain a capability to resume testing.

To assure that our nuclear deterrent remains unquestioned under a test ban, we will explore other means of maintaining our confidence in the safety, the reliability and the performance of our own weapons. We will also refocus much of the talent and resources of our nation's nuclear labs on new technologies to curb the spread of nuclear weapons and verify arms control treaties.

Beyond these significant actions, I am also taking steps to revitalize the Arms Control and Disarmament Agency, so that it can play an active role in meeting the arms control and nonproliferation challenges of this new era. I am committed to protecting our people, deterring aggression and combatting terrorism. The work of combatting proliferation of weapons of mass destruction is difficult and unending, but it is an essential part of this task. It must be done....

(End of excerpt)

CONFERENCE ON DISARMAMENT

CD/1206
CD/TIA/WP.11
20 July 1993

Original: ENGLISH

UNITED STATES OF AMERICA

Remarks by Ambassador Michael Newlin
Deputy Assistant Secretary of State
Bureau of Politico-Military Affairs

Transparency in Armaments Ad Hoc Committee
Conference on Disarmament
Geneva, March 19, 1993

My delegation appreciates the opportunity to meet with members of the Ad Hoc Committee for Transparency in Armaments to discuss the relationship of Transparency in the field of export controls of conventional military equipment and technology.

The end of the cold war has sharply reduced some old dangers such as strategic nuclear arms or massive bloc to bloc conventional conflict in Europe. This welcome situation can be expected to free human, economic, and intellectual resources for peaceful purposes. However, all of us recognize that the fundamentally new situation we face contains a new set of dangers and challenges which we must confront with wisdom and determination.

In a world dominated by opposing military blocs, nonproliferation efforts concentrated on control of nuclear arms while facilitating peaceful nuclear activities. Conventional arms, while important, were secondary to the strategic nuclear equation.

In just a few short years, other arms control activities have received great attention, and situations that were once unthinkable have come to pass. Strategic nuclear forces have been drastically reduced and the same is true of tactical nuclear weapons in Europe and elsewhere. The Conference on Disarmament, after prolonged negotiations, reached agreement on the Chemical Weapons Convention, a major step forward. There is new attention to biological weapons and to delivery systems of weapons of mass destruction.

In all of this activity, there is a realization that attention should also be paid to the control of conventional armaments. Discussion of this problem has taken place in the United Nations, in the Conference on Disarmament, in NATO, the European Community, CSCE and, I dare say, in other fora as well as in bilateral discussions. For the past two days, my colleagues and I have taken part in a discussion of arms export controls in the Security Forum of the CSCE.

In Vienna, discussions revealed that:

- All CSCE members maintain, or are in the process of creating, national controls on arms exports and imports.

- All current systems have several features in common, including an established legal or executive basis, a licensing system, policies that reflect both national interests and international responsibilities, including means of enforcement.

- Many CSCE members have subscribed to multilateral nonproliferation regimes, and to international guidelines on arms exports.

- All CSCE members have undertaken to support the UN Register of Conventional Arms by making timely submissions of data on national arms exports and imports.

I think it is fair to say that there is a growing realization that the area of conventional arms export and import controls deserves attention. In London in October 1991, the five major arms suppliers agreed on a set of guidelines. Concerning restraints, the participants agreed that:

- They will consider carefully whether proposed transfers will promote the capabilities of the recipient to meet needs for legitimate self-defense; serve as an appropriate and proportionate response to the security and military threats confronting the recipient country; and enhance the capability of the recipient to participate in regional or other collective arrangements or other measures consistent with the charter of the United Nations or requested by the United Nations.

- They will avoid transfers which would be likely to prolong or aggravate an existing armed conflict: increase tension in a region or contribute to regional instability; introduce destabilizing military capabilities in a region; contravene embargoes or other relevant internationally agreed restraints to which they are parties; be used other than for the legitimate defense and security needs of the recipient state; support or encourage international terrorism; be used to interfere with the internal affairs of sovereign states; or seriously undermine the recipient state's economy.

It is in this encouraging context that I welcome the opportunity to speak to you about rules of the road for U.S. arms transfers -- the policies that guide our sales and exports of conventional weaponry. It is in this context that the U.S. makes arms sales which are consistent with U.S. foreign policy and security interests. Exports are banned to nations that support terrorism, and are severely restricted to those that violate human rights or have engaged or are likely to engage in aggression.

The vast bulk of U.S. sales go to NATO and other friends and allies. Given the pattern of our sales, we have not supported constraints on the overall volume or value of U.S. defense sales, outside the context of broader arms control agreements, nor have we supported unilateral moratoria on defense sales.

Our most visible effort at restraint is the 1991 Arms Control in the Middle East Initiative with the four other major arms suppliers. The Initiative explicitly seeks to combine restraint among arms suppliers with an effort to reduce demand by establishing a regional political process. As part of this, the U.S. co-sponsors an Arms Control and Regional Security (ACRS) Working Group, which seeks to share our experience in arms control and confidence-building measures with Middle Easter states, and to identify specific confidence-building measures for future discussion. We have made similar efforts in other regions.

Our goal is to avoid destabilizing arms flows that can create a threat to international peace and security. We remain committed to continuing responsible arms transfers to meet the legitimate defense needs of our friends and allies. We are also working on some global measures in the United Nations to address this problem, such as Transparency in Armaments (TIA).

We applaud the recent CSCE resolution agreed to in support of the TIA Initiative. The U.S. is already more transparent in arms transfers than other countries. We are eager to help others become more open about their arms transfers.

We consider the UN Transparency in Armaments Initiative to be the principal international venue for transparency. As Ambassador Ledogar stated to the CD two weeks ago, we believe all governments represented around this table attach great importance to ensuring that the register is a successful one. As you know, the deadline for national submissions, April 30, is fast approaching. My government is busily preparing data on conventional imports and exports, along with available background information regarding our military holdings, procurement through national production, and relevant policies.

The U.S., along with many others, sees great value in establishing a global confidence-building measure which highlights transparency and openness with regard to the flow of conventional arms. While the CD will be pursuing distinct issues related to transparency in armaments, the U.S. thinks this conference could also usefully undertake efforts to give the so-called "New York" track -- the register, a boost. In fact, individually and collectively, members of this conference should take the lead in promoting the UN Register and ensuring its effective operation.

Some may ask how should the conference do this. What measure should the CD embark on with regard to the register? As a starting point, we suggest that the CD could do two things. First, the CD member states could agree collectively that they will provide the Register's requested data and information to the United Nations Secretary-General on time, complying with the Register's April 30th deadline. Second, the CD could agree that we will encourage others to do the same, beginning with non-member participant states of the CD.

As a separate initiative, and noting what our friends in Vienna are doing, I believe that the conference could also agree that on or about April 30, when we submit data to the register we will exchange informally, among ourselves, here in Geneva, copies of national submissions.

The Conference on Disarmament, as the sole multilateral global negotiating body on disarmament, should pursue not only its own transparency in armaments objectives, but also take the lead in supporting and promoting the UN Register. What better way for this body to show the international community its resolve of openness and transparency in the area of conventional arms?

The London Guidelines for Conventional Arms Transfers that I elaborated on earlier are a good starting point for building international consensus on common principles regarding what are good or bad arms transfers. Further discussions -- bilaterally, as we are doing now with Russia and other former Warsaw Pact states, or multilaterally in the CD, ACME, or other fora -- of the policy rationale for arms transfers (as opposed to the purely commercial benefits) can be expected.

We realize that arms transfers restraints which are not multilateral will only encourage other suppliers to increase arms production and sales in order to fill the vacuum left by responsible suppliers, and that our efforts should be undertaken in a multilateral context. However, it is important that this context include all significant suppliers. The U.S. will support friends and allies as we have in the past, in complete accord with our own stringent policy guidelines.

As many of you are aware, the United States has approached a number of governments on a strictly bilateral basis to discuss our concern with the exports of arms and arms-related technology to various third countries. We have sought to dispel any impression that, in raising questions about specific transactions, the U.S. objects to foreign arms exports, or seeks to protect U.S. commercial interests by freezing other countries' firms out of the international arms trade.

In the interest of ensuring that world arms sales are compatible with preserving regional and global stability -- an objective shared by all responsible members of the international community -- I would like to take this opportunity to discuss the principles that the United States applies in judging the acceptability of proposed sales of arms and arms-related technology.

Constraints on U.S. Sales

Many countries, including the U.S., are actively pursuing conversion of domestic defense industries into commercial production for the civilian market. We regard participation in the international arms market as a legitimate commercial activity and a normal instrument for promoting national interests. Many countries, including the United States, take financial considerations into account when exporting arms.

At the same time, we recognize that these sales can have important implications for our own security and foreign policy interests and those of the recipient and third parties. We therefore do not make commercial interests the major determinant of arms sales decisions.

Each sale proposed by a U.S. firm is given careful scrutiny within the U.S. government before it can go forward. This process is often subject to contentious debate both within the executive branch and between the executive branch and the legislative branch. All but the most routine cases are coordinated with other offices and agencies within the executive branch, based on whether their area of expertise relates to the case. In many cases, we are required by U.S. law to notify major sales to the U.S. Congress prior to conclusion of the sales agreement.

In almost every case, there are implications of the sale for the security of the U.S. and the confidence and stability of the larger international community.

Decisions on specific arms transfers take into account U.S. national security and arms control interests, the non-proliferation of destabilizing military capabilities, and the proposed recipient's legitimate defense requirements, ability to control effectively retransfer of the equipment, and external and internal behavior.

Parallel to our deliberative process we maintain strict enforcement of controls over exports of goods and technology.

General Prohibitions

Countries deemed to represent a direct threat to U.S. security are automatically ineligible to receive U.S. arms of any type. I am happy to report that the number of these countries has declined in recent years. Sales of arms or related technologies are not permitted when the recipients are thought to harbor aggressive designs on their neighbors.

We have refrained from selling military equipment to states which have adopted policies aimed at the systematic denial of human rights to a large portion of their populations. We have sought in addition to deprive states engaging in international terrorism from acquiring the means of committing further violence.

Absolute bans have also been placed on the transfer of especially destabilizing technologies. For instance, we have prohibited the transfer of all weapons of mass destruction. In this connection, we have adopted not only unilateral constraints on the sale of their most deadly delivery vehicles -- ballistic missiles and related technologies -- but have also joined multilateral agreements such as the Missile Technology Control Regime (MTCR).

Another critical consideration in evaluating weapons transfers is the capacity of the recipient to keep equipment as well as technology from being sold or transferred to third parties. Some newly-developed highly-advanced technologies -- such as the so-called "stealth" technologies -- are considered so critical to maintaining our defenses that we have refused to transfer them to any recipient.

Gray Areas: Need to Assess Regional Impact

The most difficult cases involve countries that are responsible members of the international community, but involved in protracted regional disputes. While recognizing legitimate needs of self-defense, we have constrained the export of arms or arms-related technology when convinced that such exports would upset regional arms balances, stimulate a

regional arms race, or undermine regional peace and security. In these instances, the nature and quantity of the technology to be transferred is of great importance.

Temporary Prohibitions

For some countries, such as those experiencing widespread civil unrest or recurring human rights problems, or where a military coup has caused increased instability or resulted in the establishment of an illegitimate government, we do not approve any exports of defense items until sufficient progress has been made toward rectifying the situation.

In such instances, we wish to avoid both supporting militaries that abuse their power, and contributing to any instability or continuing human rights violations. These, then, are some of the "tests" that projected U.S. arms sales must pass in order to be approved.

We recognize that applying these considerations to concrete cases is often difficult and that states can have honest disagreements over the potential impact of weapons transfers. We believe, however, that our common interests in international peace and stability outweigh disputes over specific cases and allow us to agree on general principles. Adherence to these guidelines has had, and will have, no effect on the ability of my country to support friends and allies.

The U.S. and other permanent members of the UN Security Council have already had extensive discussions on arms transfer restraints on how best to judge the regional political implications of arms sales, and we achieved a solid success in agreeing to general principles on judging these implications at the meeting I have referred to in London.

All countries should be made aware of the dangers of proliferation, and be encouraged to develop responsible national export policies and legal systems to enforce such policies. The two must go hand-in-hand, for even the best export control system is rendered worthless by irresponsible arms transfer policies.

The need for enhanced international cooperation in the area of conventional arms exports is made all the more important by the fact that the arms market is obviously shrinking. The volume and value of global arms transfers has fallen sharply. It is possible that the market may contract by at least another 25 percent by the end of the decade. This has heightened already fierce competition among suppliers. Many will not

survive. This can create pressure to make irresponsible arms exports.

While overall sales have declined, the relative U.S. share of the market has grown. Because of reduced arms purchases in the former communist world, the U.S. is now the largest arms exporter, accounting for roughly half of the new sales.

In view of these changes in the global arms market, and the relative increase in the U.S. share of it, we are even more conscious of the need to act responsibly and to promote international observance of responsible arms transfer policies. We take this responsibility very seriously. For our part, the U.S. stands ready to assist others in creating the type of export control process and policy framework to prevent destabilizing transfers of conventional arms.

CONFERENCE ON DISARMAMENT

CD/1207
CD/TIA/WP.12
20 July 1993

Original: ENGLISH

UNITED STATES OF AMERICA

U.S. arms export system: policy, practices & contacts

September 4, 1992

The United States views the transfer of conventional arms and other defense articles and services as an integral part of its national security, arms control, and foreign policies. Applied judiciously, foreign arms transfers can help meet the legitimate defense needs of friendly countries, deter aggression, and foster regional stability, thus promoting regional and international security and the peaceful resolution of disputes. Mindful of the potentially adverse consequences of indiscriminate international arms transfer, the United States strictly regulates arms exports and reexports and has a genuine interest in arms transfer restraint. The U.S. has initiated and participates in several international efforts related to arms transfer restraint, and remains prepared to consider other realistic proposals directed toward that end.

There are two channels by which the United States exports arms: the government-to-government security assistance program managed by the Department of Defense under the policy guidance of the Department of State; and, through private or direct commercial arms exports licensed by the Department of State. The legal, policy, and regulatory bases of U.S. arms transfers are elaborate, comprehensive, and transparent.

Security Assistance. U.S. government-to-government programs are conducted under statutory authority of the Foreign Assistance Act of 1961, as amended, and the Arms Export Control Act (AECA), as amended. They consist of foreign military sales (FMS), the Foreign Military Financing Program (FMF), and the Excess Defense Articles Program (EDA). FMS transfers may take the form of cash or FMF, the latter extended by the Department of Defense as grants of concessional rate loans that may be used to procure defense articles, defense services, and design and construction services from the military departments or directly from U.S. commercial suppliers. EDA are defense articles declared "excess" to Department of Defense needs and sold to foreign governments at reduced prices based on age and condition. Although FMS traditionally has been the main vehicle for U.S. arms transfers, commercial arms sales have been increasing in value relative to FMS.

INDIANA UNIVERSITY

Commercial Arms Exports. Direct commercial sales of U.S.-origin defense products, components, technologies and services are governed by the Arms Export Control Act and implemented under the International Traffic in Arms Regulations (ITAR). Control over the export of defense articles and services is exercised through a comprehensive export licensing system administered by the State Department's Office of Defense Trade Controls, formerly the Office of Munitions Control.

The essential features of the U.S. export system include:

The U.S. Munitions List. The Arms Export Control Act provides for the President to designate which commodities shall be deemed to be defense articles and defense services. Such designated defense articles and services constitute the U.S. Munitions List (USML), which is contained in the ITAR. The designation of defense articles and services is based primarily on whether the article or service is deemed to be inherently military in character. Such articles may be further designated as "significant military equipment" for which special export controls are warranted because of the capacity for substantial military utility or capability. USML articles are subject to ITAR controls and regulated by the Department of State.

The ITAR defines defense services as:

> (a) The furnishing of assistance, including training to foreign persons in the design, engineering, development, production, processing, manufacture, use, operation, overhaul, repair, maintanance, modification, or reconstruction of defense articles, whether in the United States or abroad; or (b) the furnishing to foreign persons of any technical data, whether in the United States or abroad.

Technical Data. The extent to which the U.S. controls technical data exports is probably unique among the world's leading exporters. Any exporter who wishes to export technical data pertaining to any article covered by the United States Munitions List must receive prior licensing approval from the Office of Defense Trade Controls (DTC).

Technical data is information "directly related" to the design, production, use, repair, or modification of defense articles. It does not include information concerning general scientific principles commonly taught in academia. It also does not include base marketing information on function or purpose or general system description of defense articles. The export of technical data is regulated regardless of whether the data is transmitted by phone, written correspondence, telex, fax, or in person conversation.

There are certain licensing exemptions for the export of technical data. They include:

--Technical data to be disclosed pursuant to an official written request or directive from the U.S. Department of Defense;

--Technical data in furtherance of a manufacturing license or technical assistance agreement approved by DTC;

--Technical data sent by a U.S. corporation to its U.S. person-employee or to the USG;

--Technical data in the form of basic operations, maintenance, and training information relating to a defense article lawfully exported or authorized for export to the same recipient;

--Technical data approved for public release, even if unpublished, by the cognizant U.S. agency.

Arms Export Licensing System. Central to the regulation of commercial arms exports is the licensing system administered by the Department of State's Office of Defense Trade Controls (DTC). Commercial firms and private individuals engaged in the manufacture or export of U.S.-origin defense articles and services must register with DTC. All U.S. persons must seek approval from DTC to export any item or service covered by the USML, unless the export is specifically exempted under the ITAR. In some instances, non-transfer and end use assurances are required of end-users and appropriate authorities in charge of monitoring legal transactions of the private sector. U.S. law provides for sanctions in the event of violations of export regulations.

Decisions to approve or deny arms export license applications are considered on a case-by-case basis and subject to an intra-governmental review and coordination process. A broad range of factors is taken into account, including:

-- the stated end-use and end-user of the equipment or services;

-- whether the transfer is consistent with U.S. national security, foreign policy and international obligations;

-- whether it will contribute to or adversely affect regional security and stability;

-- the recipients legitimate defense requirements;

-- whether the proposed transfer can be absorbed without overburdening the recipient's military support system or financial resources; and,

-- whether other legal and policy requirements (e.g., arms control and human rights) are satisfied.

Retransfer/Re-Export. Persuant to ITAR § 123.9(a), the country designated as the ultimate destination on an export license application or on a shipper's export declaration must be the country of ultimate end-use. The prior written approval of the Department of State must be obtained before reselling, diverting, transferring, transhipping, or disposing of a defense article in any country other that the country of ultimate destination as stated on the export license, or on the shipper's export declaration in cases where an exemption is claimed.

In addition, § 123.10 of the ITAR requires that an application for a license to export significant military equipment (as defined in § 120.19 of the ITAR) must be accompanied by a non-transfer and use certificate (Form DSP-83) at the time of submission to the Office of Defense Trade Controls. This form is to be executed by the foreign consignee and foreign end-user. The certificate stipulates that the foreign consignee and foreign end-user will not re-export, resell or otherwise dispose of the significant military equipment enumerated in the application outside the country named as the location of the foreign end-use, without the prior written approval of the Department of State.

Enforcement Operations. Export control enforcement efforts are both preventive and reactive and can be either administrative or judicial. Under the authority of ITAR, any license or other approval may be suspended, revoked, denied or amended without prior notice whenever DTC believes that applicable laws and regulations have been violated. Reported and attempted violations of the ITAR are investigated in coordination with appropriate offices and agencies. By long-standing interdepartmental agreement, the U.S. Customs Service conducts actual investigations of alleged violations. DTC coordinates with and assists Customs and other law enforcement authorities in conducting their investigations. DTC also assists in consulting the Department of Justice if criminal procedings are to occur. Enforcement actions range from detention and seizure of suspect shipments to criminal prosecution of firms and individuals. Commercial firms or individuals convicted of violating the ITAR can be debarred from participating in the export of defense articles and services, as well as the transfer of technical data for a

period up to three years. They may also be subject to criminal and civil fines as well as imprisonment.

Legislative Oversight. Congressional interest in, and oversight of the Security Assistance and Commercial Arms Sales Programs is extensive. The Congress is able to oversee these programs through the statutory reporting requirements which are mandated by the AECA. The AECA also provides for Congressional notification prior to the issuance of certain types of licenses. This includes the export of major defense equipment valued at $14 million or more, or the export of any defense articles or services valued at $50 million or more. Similar certification is required before approval of technical assistance or manufacturing license agreements that involve the manufacture abroad of significant military equipment to any country except NATO members. Additionally, Congress must be provided with an annual estimate of anticipated approval during the current calendar year.

Transparency of U.S. Arms Transfers. The previously mentioned statutory Congressional notifications are matters of public record, and contribute to the openness and transparency of the U.S. arms export program. By statute, the President is also required to submit an annual budget request for Security Assistance Programs which is generally presented in Open testimony and published as the Congressional Presentation for Security Assistance Programs. Furthermore, the U.S. Defense Security Assistance Agency publishes the implementation guidance for the Security Assistance Program in the Security Assistance Management Manual, and also publishes annual comprehensive reports entitled Fiscal Year Series and Foreign Military Sales, Military Construction Sales and Military Assistance Facts; and the U.S. Agency for International Development annually publishes U.S. Overseas Loans and Grants and Assistance from International Organizations, including country-by-country military assistance program data. Finally, the U.S. Arms Control and Disarmament Agency's (ACDA) annual publication, World Military Expenditures and Arms Transfers, is designed to provide comprehensive public information on international arms transfers. Such transparency, we believe, can contribute to international confidence by increasing regional stability and restraining destabilizing arms sales.

CONFERENCE ON DISARMAMENT

CD/1208
27 July 1993

ENGLISH
Original: SPANISH

LETTER DATED 22 JULY 1993 FROM THE PERMANENT REPRESENTATIVE OF VENEZUELA ADDRESSED TO THE SECRETARY-GENERAL OF THE CONFERENCE ON DISARMAMENT TRANSMITTING THE TEXT OF A COMMUNIQUE ISSUED BY HIS GOVERNMENT IN CONNECTION WITH THE EXTENSION OF THE EXISTING MORATORIUM ON NUCLEAR TESTING

I have pleasure in forwarding to you the attached communique from the Government of Venezuela relating to the decision adopted by the United States, the Russian Federation and France to extend the moratorium they have voluntarily and unilaterally placed on their nuclear testing programmes, as well as the intention expressed by the United Kingdom of Great Britain and Northern Ireland to do likewise.

I would be very grateful if this text could be published as an official document of the Conference on Disarmament and distributed to all delegations, both of member States and of non-member States participating in this multilateral negotiating forum.

(Signed): Horacio Arteaga
Ambassador
Permament Representative

COMMUNIQUE

The Government of Venezuela welcomes the decision taken by the Governments of the United States of America, the Russian Federation and France to extend the moratorium they have voluntarily and unilaterally placed on their nuclear testing, as well as the intention expressed by the United Kingdom of Great Britain and Northern Ireland to associate itself with this decision. This moratorium, which has been observed by these countries since last year, opens the path towards fulfilment of the undertaking entered into by the above-mentioned Powers in the preamble to the 1963 partial test-ban Treaty and in the preamble to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons.

Venezuela, which, in keeping with its policy favouring general and complete disarmament, possesses no nuclear weapons, reaffirms the importance of the earliest possible conclusion of a complete nuclear-test-ban treaty as a decisive step that can put an end to the cycle of the development and production of these aggressive systems.

Venezuela notes with optimism this process that should lead to the total cessation of nuclear testing, and expresses its keen wish that the nuclear Powers should adopt more effective measures in pursuit of nuclear disarmament and the elimination of existing nuclear arsenals.

CONFERENCE ON DISARMAMENT

CD/1209
3 August 1993

Original: ENGLISH

AUSTRALIA, MEXICO and NIGERIA: Draft decision

The Conference on Disarmament,

Taking note of recent initiatives regarding the negotiation of a comprehensive nuclear-test-ban treaty (CTB),

Convinced that, to contribute effectively to the prevention of the proliferation of nuclear weapons in all its aspects and therefore to the enhancement of international peace and security, a CTB should be universal and internationally verifiable,

Convinced further that, in order to achieve this goal, it is essential that a CTB be, from the outset, multilaterally negotiated in all its aspects, including its verification provisions,

Stresses that, as the sole multilateral negotiating forum of the international community in the field of disarmament, it has the primary responsibility to negotiate a CTB,

Decides to review the mandate of the Ad Hoc Committee on NTB in order to allow it to undertake forthwith the negotiation of a CTB;

Requests the Ad Hoc Committee on NTB to make the necessary arrangements to continue this negotiation immediately after the end of the present session.

GE.93-61919

CONFERENCE ON DISARMAMENT

CD/1210
4 August 1993

Original: ENGLISH

LETTER DATED 4 AUGUST 1993 FROM THE PERMANENT REPRESENTATIVE OF INDONESIA ADDRESSED TO THE SECRETARY-GENERAL OF THE CONFERENCE ON DISARMAMENT TRANSMITTING A MESSAGE FROM MR. ALI ALATAS, MINISTER FOR FOREIGN AFFAIRS OF INDONESIA AND PRESIDENT OF THE AMENDMENT CONFERENCE OF STATES PARTIES TO THE TREATY BANNING NUCLEAR WEAPON TESTS IN THE ATMOSPHERE, IN OUTER SPACE AND UNDER WATER ON THE OCCASION OF THE 30TH ANNIVERSARY OF THE SIGNING OF THE TREATY

I have the honour to submit to you a document containing the message from Mr. Ali ALATAS, Minister for Foreign Affairs of the Republic of Indonesia and President of the Amendment Conference of States Parties to the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water on the Occasion of the 30th Anniversary of the Signing of the Treaty.

It would be highly appreciated, if you could take the necessary steps to include this document as an official document of the Conference on Disarmament and at the same time to make it available to all member and non-member states, participating in the Conference on Disarmament.

Geneva, 4 August 1993.

(Signed): Soemadi D.M. BROTODININGRAT

MESSAGE

BY H.E. MR. ALI ALATAS
MINISTER FOR FOREIGN AFFAIRS
OF THE REPUBLIC OF INDONESIA
AND
PRESIDENT OF THE AMENDMENT CONFERENCE
OF STATES PARTIES TO THE
TREATY BANNING NUCLEAR WEAPONS TESTS
IN THE ATMOSPHERE, IN OUTER SPACE
AND UNDER WATER
ON THE OCCASION OF THE 30TH ANNIVERSARY
OF THE SIGNING OF THE TREATY

Today, the world commemorates the 30th anniversary of the signing of the Treaty Banning Nuclear Tests in the Atmosphere, in Outer Space and Under Water. Widely known as the Partial or Limited Test Ban Treaty, it was rightly hailed as a trailblazing event. Although the Treaty left much room for improvement by not banning underground nuclear test explosions, it was nonetheless a historic milestone in nuclear arms control and disarmament because it was the first agreement between the rival nuclear powers. To encourage this positive development, dozens of non-nuclear weapon states, including my own country, Indonesia, signed on to the Treaty within weeks after it was concluded.

This anniversary is special not because it marks a long passage of time, but because we observe it when, for the first time since the Treaty was signed, silence reigns at the nuclear weapon test sites. Today more than ever before, there is hope that the Treaty's promise of a total test ban will be finally fulfilled.

In 1988, on the 25th anniversary of the Treaty, Indonesia and five other members states of the United Nations, launched an effort to amend and to convert the 1963 Treaty into a comprehensive test ban treaty. That effort was propelled as much by a keen sense of exigency as by hope. After we and the other

non-nuclear weapon States Parties to the Treaty had waited in vain for a quarter of a century for the nuclear-weapon states to act on their own promise to do so, the only viable recourse left was to initiate the amendment process in accordance with the Treaty's provisions.

Thus in January 1991, I had the honour of presiding over the Amendment Conference. Our hope of bringing the Amendment process to its completion, however, could not be realized then, but the collective determination of the participants of the Conference was enough to at least prevent its outright termination.

The 1991 Conference empowered its President to consult with the Parties to the Treaty to determine an appropriate time to resume its work. Accordingly and pursuant to General Assembly Resolution 47/46, I shall convene a special meeting of the States Parties to the Treaty on 10 - 11 August 1993 in New York, expressly for the purpose of examining the feasibility of reconvening the Amendment Conference later this year. It will be a privilege for me to receive the guidance of the States Parties on this matter.

I feel that this thirtieth year of the Treaty which has begun so hopefully should not come to an end without a concerted effort by the international community to finish the work begun three decades ago by U.S. President Kennedy, Soviet Premier Khrushchev, and British Prime Minister Macmillan. If the will of the Parties is to hold a second session of the Amendment Conference, I shall do everything in my power to ensure that it will be a fitting and propitious occasion for the nations of the world to reaffirm the pledge enshrined in the 1963 Treaty to "seek the discontinuance of all test explosions of nuclear weapons in all spheres for all time".

CONFERENCE ON DISARMAMENT

CD/1211
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PROGRESS REPORT TO THE CONFERENCE ON DISARMAMENT ON THE THIRTY-SIXTH SESSION OF THE AD HOC GROUP OF SCIENTIFIC EXPERTS TO CONSIDER INTERNATIONAL COOPERATIVE MEASURES TO DETECT AND IDENTIFY SEISMIC EVENTS

1. The Ad Hoc Group of Scientific Experts to Consider International Cooperative Measures to Detect and Identify Seismic Events, initially established in pursuance of the decision taken by the Conference of the Committee on Disarmament on 22 July 1976, held its thirty-sixth formal session from 26 July to 6 August 1993, in the Palais des Nations, Geneva, under the Chairmanship of Dr. Ola Dahlman of Sweden. This was the twenty-eighth session of the Group, convened under its new mandate by the decision of the Committee on Disarmament at its 48th meeting on 7 August 1979.

2. The Ad Hoc Group is open to all member States of the Conference on Disarmament. It is also open on a standing basis to all non-member States which have been invited upon their request by the Conference on Disarmament to participate in its work. Accordingly, scientific experts and representatives of the following member States of the Conference on Disarmament participated in the session: Australia, Belgium, Canada, China, Egypt, France, Germany, Hungary, India, Indonesia, Italy, Japan, Mexico, Netherlands, Pakistan, Peru, Romania, Russian Federation, Sweden, United Kingdom of Great Britain and Northern Ireland and the United States of America.

3. Scientific experts and representatives from the following non-member States of the Conference on Disarmament participated in the session: Austria, Czech Republic, Finland, New Zealand, Norway, South Africa, Spain and Switzerland.

4. During the session 43 papers containing information on national investigations related to the work of the Group were presented by experts from: Australia, Austria, Canada, Czech Republic, Egypt, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Peru, Romania, Russian Federation, South Africa, Spain, Sweden, United Kingdom and United States of America.

5. The Ad Hoc Group conducted in-depth discussions on the reassessment of the concept of a global system for the exchange of seismic data worked out in its Fifth Report (CD/903), its Sixth Report (CD/1144) and its Report on the Evaluation of GSETT-2 (Conference Room Paper 228). These discussions

were based on material prepared by working groups of participating experts. Several of these working groups thereby finalized their work. The discussions were focused on the overall design and plans for future testing of the concept. A summary of these elaborations is annexed to this progress report.

6. The Ad Hoc Group discussed the schedule and plans for developing, testing and evaluating an experimental International Seismic Monitoring System. This effort, referred to as GSETT-3, is already under way, and builds upon key elements developed in previous tests. The GSETT-3 exercise has three primary objectives that distinguish it from previous tests. These objectives are to:

(a) Develop and test new concepts for an experimental International Seismic Monitoring System, building upon previous experience;

(b) Provide a practical basis upon which to furnish the Conference on Disarmament with timely technical information;

(c) Develop an experimental system that can evolve and adapt to support future requirements that may be required by the Conference on Disarmament.

The current plans call for the full-scale phase of GSETT-3 to begin by 1 January 1995. The Group has adopted a schedule to meet this date as follows:

1993	Define technical concepts
	Begin implementation of station and communications network
	Begin development of experimental International Data Centre
	Begin development and implementation of national facilities
	Begin initial, continuous test operations of the experimental system
1994	Finalize elements of the experimental system
	Finalize participation of countries and stations
	Continue build-up of test operations
1995	Begin full-scale tests
	Begin evaluation of performance.

Those countries which have stations that will form part of the experimental network are urged to make a formal commitment to contribute these facilities in GSETT-3.

7. The Ad Hoc Group agreed to establish working groups to deal with the planning, operation and evaluation of GSETT-3.

8. The Ad Hoc Group discussed cost estimates of the system planned for GSETT-3. The Group noted that the global seismic network being planned for testing draws heavily on prior investments in seismic facilities built on a national basis. An analysis of the costs for GSETT-3 is attached as annex 2. The cost of the eventual system to be tested depends on a number of factors governing the implementation of the future system. Some of the key factors are provided in this annex. Additional guidance on these factors will need to be provided by the Conference on Disarmament before refinements to the cost estimates can be made.

9. The Ad Hoc Group noted with appreciation the convening of two informal technical meetings since its previous session. The first meeting was hosted by Italy in Rome from 1 to 3 March 1993 and had as its purpose to consider seismological procedures. The second meeting was convened by the United States in Lansdowne, Virginia from 29 June to 2 July 1993, to consider issues to assist the Ad Hoc Group in its planning for GSETT-3. Many participants of the Group were able to attend and contribute to these meetings. This aided in the Group's continued work.

10. The Ad Hoc Group received and appreciated briefings from individual delegations on the activities of the Ad Hoc Committee on a Nuclear Test Ban. The Group agreed to invite the Chairman of the Ad Hoc Committee to its next session to give presentations on issues dealt with by the Committee that are relevant to the work of the Ad Hoc Group.

11. The Ad Hoc Group appreciated the offer by Dr. Gerald Duma of Austria to act as a contact person to maintain informal contact with the International Atomic Energy Agency (IAEA).

12. The Group received and discussed a number of proposals for work in the areas of seismic event identification methods, non-seismological monitoring techniques, and for the expansion of the mandate so as to include the consideration of non-seismic methods. No consensus was reached on these proposals. It was agreed that informal consultations would be carried out on these subjects under the aegis of the Chairman and reported upon at the next session of the Group.

13. The Ad Hoc Group suggests that its next session be convened from 7-18 February 1994 in Geneva, or at a date that is most responsive to the needs of the Conference on Disarmament. In addition, the Ad Hoc Group recognizes that, depending on the activities of the Conference on Disarmament, it may become necessary to meet more frequently than in the past.

Annex 1

TESTING AN EXPERIMENTAL INTERNATIONAL
SEISMIC MONITORING SYSTEM (GSETT-3)

1. Objectives

An important goal of the Group of Scientific Experts (GSE) is to develop scientific and technical concepts for an International Seismic Monitoring System (ISMS) and to test these concepts in practical operation.

Following the successful conduct of GSETT-2, and with experience gained from that test, the original concept for an ISMS has been revised. This revision has also taken into account emerging new technologies, some of which were tested during GSETT-2.

The GSE is now planning the development, testing and evaluation of an experimental ISMS. The experimental system should be able to evolve and adapt to support future CD requirements for monitoring a nuclear test ban. It will further provide a practical basis upon which to furnish the CD with the timely technical information required for its deliberations on monitoring and verification.

2. Overall concept and design

This section gives a general overview of the concept and design of the ISMS as envisaged by the GSE. During GSETT-3, the GSE intends to test an experimental ISMS that matches as closely as possible these design concepts.

The essential features of ISMS are to:

- Ensure prompt and convenient provision of reliable data to all participating States for their national verification purposes;

- Provide a cost-efficient service to all participating States;

- Provide rapid acquisition and processing of data from a global network of stations at a central processing facility;

- Provide as much automation as possible in the collection, processing and distribution of data;

- Provide a permanent archive of all data collected or generated by the system;

- Provide data security and quality control;

- Provide an architecture which will permit modifications and improvements as they are judged desirable.

The infrastructure of the ISMS is flexible enough to incorporate the collection, archiving and distribution of data from non-seismic techniques, for example, radioactivity, hydroacoustics and infrasound.

There are three main elements of the envisaged ISMS:

(a) A global network of stations

The Alpha stations consist primarily of arrays, with some three-component stations, and are designed and located to provide detection of seismic events throughout the world. The station waveform data are telemetered continuously to the International Data Centre (IDC), either directly or through an NDC. The NDC should record the station waveforms and log the IDC access to the station to corroborate the data reliability and enable the IDC to recover lost data when communication links fail. Alpha stations should meet GSE criteria for sensitivity, instrumental response, recording hardware and software, operation and management.

The Beta stations provide data supplementary to that provided by the Alpha stations, so that events can be located with improved accuracy. Beta stations are primarily three-component stations, with some arrays. GSE standards for these stations may not be as stringent as for the Alpha stations. Though not telemetered continuously to the IDC, waveform segments can be retrieved automatically by the IDC or by NDCs from continuous data archives at National Data Centres (NDCs) or the individual stations.

Participating States may also make available supplementary data (gamma data) from national and regional networks that are not formally part of the ISMS. Stations are maintained to national standards. Gamma data are available on request, although rapidity of response may vary from one network to another. The IDC will make use of these data according to standard procedures agreed to by the GSE.

(b) National Data Centres (NDCs)

NDCs are the primary users of data from the ISMS to support national verification needs. NDCs (or cooperative regional facilities, in some cases) operate and maintain Alpha and Beta stations according to GSE standards and procedures. The NDCs are responsible for the collection of continuous data from the alpha stations and for ensuring that such data are transmitted to the IDC. Communication links are operated to ensure availability of data to the IDC. Automatic access to Beta data may be at NDCs or at the stations themselves. Gamma data are compiled at the NDCs and submitted to the IDC.

(c) International Data Centre (IDC)

The IDC collects waveform data from Alpha stations (by continuous telemetry) and from Beta stations (as segments, retrieved automatically), and processes these data to produce and distribute a daily bulletin. Automation is incorporated in the IDC's procedures to the greatest extent

possible. All data are authenticated and archived for open access by any participating State. The IDC also collects other seismological information (gamma data) from NDCs. It monitors calibration of the Alpha and Beta stations, and ensures quality control of data.

3. Station requirements

The GSE has defined the minimum technical specifications that should be covered by so-called "ISMS-standard" stations. This does not necessarily mean that these facilities consist of identical technical components, but the components of these systems must meet basic functional and technical requirements. During GSETT-3 as many participating stations as possible should conform to these ISMS standards.

For the instrumentation of such systems the following general design requirements should be taken into consideration: modularity; flexibility; reliability; robustness; incorporation of widely used components; and, low power consumption.

If the selection of the technical components follow these criteria, instruments can be configured in many ways covering the full range from three-component to array stations. Thus, an ISMS station could be tailored to the local conditions and be coupled to the network configuration to produce a uniform detection threshold for monitoring.

An ISMS-standard three-component station would consist of the following elements:

- Three-component broadband seismometers;
- A data acquisition system with digitizers to convert the seismometer output signals into digital form and modules for placing authentication signatures in the data stream;
- Electronics for very accurate synchronization to Universal Time;
- A system for transmitting data to the IDC, either directly or through an NDC (Alpha stations only) or responding to IDC requests for data (Beta stations), as well as for managing the flow, calibration, and archival of the data;
- Devices for data archiving;
- Communication interfaces for data transmission to NDCs and IDC; and
- Data channels for additional input signals (e.g. wind indicators, temperature, and other environmental data) and station status indicators.

Some of the data handling facilities may be at the NDC rather than at the station.

An ISMS-standard array station would consist of all the elements above plus additional vertical component short-period sensors distributed to enhance the signal-to-noise ratio and to provide azimuth and phase identification information. During GSETT-2 the GSE found that arrays were especially effective in detecting small seismic events, both at regional and teleseismic distances.

The station requirements are summarized in table 1.

4. Network definition for the experimental system

Based on experience from previous tests and from results of computer simulation, the GSE proposes that the experimental system should contain a network of 53 Alpha stations and more than 100 Beta stations. The proposed Alpha station locations are shown in figure 1 and the countries are listed in table 2. Twenty-seven of these stations are of the array type and 26 are three-component stations. In the actual station implementation, the locations of some of these stations may be moved with reference to conditions in each country.

From figure 1 it is seen that most of the proposed stations already exist. Some stations conform already with ISMS standards, whereas some will need to be upgraded.

5. Requirements for the experimental IDC

The United States has offered to build and operate an experimental IDC near Washington, D.C. The products and services of the experimental IDC will include:

- an automatically produced event list based on Alpha station data within one hour;

- an automatically produced event list based on Alpha and Beta station data within four hours;

- a final, analyst-reviewed event bulletin within two days.

The IDC should keep an archive of all waveforms and all other data received, all event lists and bulletins produced, event bulletins received from national and regional networks for events detected by the alpha network, detection lists, station information, calibration, travel-time curves, amplitude-distance curves, etc.

The IDC should be an open facility, and all data and processing results should be available to participants for automatic and easy access. Data and processing results not older than 15 days should be available for on-line access, requests should be responded to automatically and promptly, and data older than 15 days should be available within 24 hours.

The IDC should monitor the status of stations and communications within the global system and provide feedback to the stations.

The procedures used at the experimental IDC should follow, as far as possible, the procedures currently envisaged for the eventual IDC. Thus, the procedures should be validated, well documented and follow strict rules and schedules, they should be as automatic as possible and contain (as a goal) no subjective judgement.

Data and results should be stored in the IDC-database and should be reliable and authenticated.

All procedures should be secure and repeatable so that results could be reproducible.

There should be sufficient redundancy in the IDC-system, at least 99 per cent functionality will be required, the time schedule must be adhered to.

The IDC Analysis Software should be available to the participants so that they can repeat the analysis.

The IDC should provide the participants with user support and computing capabilities.

It should be possible to implement improvements to the IDC software easily and rapidly.

It should be possible to incorporate new scientific methods and technological advancements.

The work should be a joint international effort.

6. Schedule of implementation and testing

Most of the Alpha stations which the GSE considers should form part of the experimental network exist today. The GSE intends to seek the support of the actual countries in contributing those stations to the experimental network and to the test. A number of new stations will have to be established and the GSE hopes that this can be achieved through national or cooperative international efforts. Modern, high-speed communication links will need to be established for both the Alpha and Beta stations in the experimental network. The GSE foresees a gradual establishment of the network by adding stations when they are completed or made available.

The introduction of the Beta-stations will also be by a step-by-step procedure and the Group will make further decisions as to the beta-network once it is clear which stations participating countries will contribute to this network.

The Group appreciates the offer by the United States to develop and operate an experimental IDC. The work to establish and test this IDC is under way and stations are being connected on a case-by-case basis.

A plan to conduct an acceptance test in 1994 of the IDC is being developed. The purpose of this acceptance test is to verify that the IDC meets the GSE requirements set forth for the experimental ISMS.

The GSE envisages that full-scale global testing of the experimental international seismic monitoring system can commence on 1 January 1995.

Table 1

STATION REQUIREMENTS FOR AN ISMS STANDARD STATION

Category	Requirement
Pass Band	.02-20 Hz (Alpha and Beta)*
Seismometer Noise	10 dB below Petersons low earth noise model
Calibration	within 5% in amplitude and 5° in phase
Sample Rate	40 samples per second ($\pm$ 50 μs)
Resolution	18 dB below Petersons low noise model
Sensitivity	200 counts/nm @ 3 Hz
System Noise	10 dB below Petersons low earth noise curve
Dynamic Range	126 dB
Linearity	90 dB over the pass band
Timing Accuracy	1 ms (Network standard timing required)
Operating Temperature	-10° C to 45° C
Authentication	required
State of Heath	a minimum of clock status, calibration status, and vault status
Format	must be one of the official GSE formats
Protocol	TCP/IP (beta)
Delay in Transmission	< 15 seconds
Data Frame Length	< 1 second
Data Access	Priority given to IDC, then NDC
Disk Buffer	7 days
Data Availability	greater than 99%
Timely Data Transmission	greater than 98%
Station Location	known within 100 m; relative location of array elements known to within 1 metre
Seismometer Orientation	known within 1 degree
	* 8.0 hertz for stations with "unique" capabilities

Table 2

Participation in GSETT-3, Current Status -- August 1993

The table is based on national working papers submitted to the GSE

Country/Region	Alpha Stations		Beta Stations	Gamma Data	NDC
	Proposed	Committed	Committed	Committed	Committed
Antarctica	3	1	0	-	-
Argentina	1	0	0	No	No
Australia	4	4	10-15	Yes	Yes
Austria	-	-	1	Yes	Yes
Belgium	-	-	0	No	No
Bolivia	1	0	0	No	No
Botswana	1	0	0	No	No
Brazil	1	0	0	No	No
Canada	3	0	0	No	No
Cen. Afr. Republic	1	0	0	No	No
China	3	0	0	No	No
Czech Republic	-	-	1	No	Yes
Denmark	1	0	0	No	No
Egypt	1	1	0	No	Yes
Finland	1	1	4	Yes	Yes
France	-	-	1	No	Yes
Germany	1	0	0	No	No
Hungary	-	-	0	No	No
India	1	0	0	No	No
Indonesia	1	0	1-2	Yes	Yes
Italy	-	-	2-5	Yes	Yes
Ivory Coast	1	0	0	No	No
Japan	1	1	0	Yes	Yes
Kazahkstan	1	0	0	No	No
S. Korea	1	0	0	No	No
Kenya	1	0	0	No	No
Netherlands	-	-	1	Yes	Yes
N. Africa (XAF)	1	0	0	-	-
New Guinea	1	0	0	No	No
New Zealand	-	-	2	Yes	Yes
Norway	3	3	1	No	Yes
Pakistan	1	0	0	No	No
Paraguay	1	0	0	No	No
Peru	-	-	1	Yes	Yes
Romania	-	-	1	Yes	Yes
Russian Rederation	5	3	6	No	Yes
S. America (XSA)	1	0	0	-	-
South Africa	1	1	1	Yes	Yes
Spain	1	1	0	Yes	Yes
Sweden	-	-	0	No	No
Switzerland	-	-	0	No	No
Thailand	1	0	0	No	No
Turkey	1	0	0	No	No
Turmenistan	1	0	0	No	No
United Kingdom	-	-	1	No	Yes
United States	6	6	15-25	Yes	Yes
TOTAL	**53**	**22**	**49-68**	**13-Yes**	**19-Yes**

Figure 1. Preliminary GSETT-3 alpha network. The filled symbols represent existing or planned stations. The open symbols denote additional stations that are proposed to be located in certain general geographical regions so as to improve the global coverage. The additional stations could be chosen either from existing stations or by installation of new facilities.

Annex II

REPORT ON "COST ESTIMATES"

This report provides an outline of the steps that will be required to determine a cost-performance relationship for the operation of an international seismic monitoring system under a Comprehensive Nuclear Test Ban. First, an initial cost estimate is provided for GSETT-3, including the cost of equipment that has already been developed under the previous GSE exercises and other national seismic programs. Second, the range of costs are provided for individual seismic installations that could be needed in any future international CTB monitoring network. Third, a list of questions are provided which will need to be answered before realistic estimates of the cost of a CTB international seismic monitoring system can be given.

1. GSETT-3: Since the seismic system for GSETT-3 has not yet been precisely defined, it is premature to give final cost estimates. The total cost will not be known until the experiment is completed. However, considering that a fairly long lead time is required for building and upgrading some new stations, the following provides initial estimates for the exercise.

The global seismic network being planned for the test draws heavily on prior investments in seismic facilities built on a national basis. From costs provided by GSE participants, these investments are roughly estimated to have been 150 MUSD. In addition to these investments, there are additional new costs associated with the planned test. These additional costs include new investments in seismic stations and arrays, communications from these seismic facilities to the International Data Center, and the annual operational cost of the stations, national data centres, and the International Data Center. These estimates of the new costs were developed using information provided by the United States, Sweden, and Japan.

Assumptions on the overall configuration of the GSETT-3 exercise

- Alpha Network

(i) 30 arrays and 20, 3-component stations.

Among them 5 new arrays are to be built and 15 stations are to be upgraded.

Currently available facilities are to be utilized as much as possible.

(ii) One IDC will be used.

- Beta Network

(i) Number of Beta stations: about 100

Rough Total Cost Estimates

- Total of past investment and new investment: about 170 MUSD

- Total operating costs: 26 MUSD/year

Rough Costs of Individual GSETT-3 Elements

- For Alpha Network

  New investment: 12 MUSD

  Running cost (including comms): 12 MUSD/year

- IDC:

  New investment: 3 MUSD

  Running cost: 6 MUSD/year

- For Beta Network:

  New investment: 4 MUSD

  Running cost (including comms): 8 MUSD/year

2. The range of costs for individual seismic installations which could be required by an international seismic monitoring network:

- Seismic Arrays:

  New investment: 1 MUSD - 10 MUSD

  Running cost (including comms): 50 KUSD/year to 500 KUSD/year

- Three Component Seismic Stations:

  New investment: 200 KUSD - 2 MUSD

  Running cost (including comms): 20 KUSD/year to 450 KUSD/year.

3. Additional Information that is Required for Estimating Future Costs:

Upon the completion and evaluation of GSETT-3, we will know the true cost of operating an experimental network of proven capability, and we will be able to compare these to our initial theoretical estimates. In addition, before reasonable estimates can be given for the costs and capabilities of future networks, the following information, which depends on political decisions, will be needed. Depending on the answers to the following questions, the cost estimate could vary by as much as an order of magnitude.

(i) The monitoring strategy in the placement and number of stations

- equal coverage or "areas of high interest"

(ii) The cost of maintaining a high - reliability network

- redundancy in sensors and communication

(iii) The monitoring requirement of confidence in event detection

- either high or low at a particular seismic magnitude level

(iv) The administrative overhead of running an IDC - this cost could easily exceed the technical costs.

(v) The costs borne by individual countries in running their network and NDC in a operational mode, including the costs of refurbishing elements of their network over time.

(vi) The cost of facility security and data authentication.